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PTO/SB/05 (03-01)
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U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. 780396.92123
First Inventor Viet H. Vu
Title Improved Air Manager For Metal-Air Cells
Express Mail Label No. EL 717 797 115 US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
2. ☐ Applicant claims small entity status.
See 37 CFR 1.27.
3. ☒ Specification [Total Pages 29]
(preferred arrangement set forth below)
 - Descriptive title of the invention
 - Cross Reference to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to sequence listing, a table, or a computer program listing appendix
 - Background of the invention
 - Brief Summary of the invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
4. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 12]
5. ☒ Oath or Declaration [Total Pages 4]
 - a. ☐ Newly executed (original or copy)
 - b. ☐ Copy from a prior application (37 CFR 1.63 (d))
(for continuation/divisional with Box 18 completed)
 - i. ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)
8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
 - a. ☐ Computer Readable Form (CRF)
 - b. Specification Sequence Listing on:
 - i. ☐ CD-ROM or CD-R (2 copies)
 - ii. ☐ paper
 - c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement (when there is an assignee) ☐ Power of Attorney
11. ☐ English Translation Document (if applicable)
12. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)
16. ☐ Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. ☐ Other:

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP)

of prior application No.: _____ / _____

Prior application information:

Examiner: _____

Group Art Unit: _____

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

☒ Customer Number or Bar Code Label



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Adam J. Forman

Date

October 12, 2001

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

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Receipt

PATENT

I hereby certify that this correspondence is being deposited with the United States Postal Services on the date set forth below as First Class Mail in an envelope addressed to:

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Date of Signature and Deposit: February 28, 2002

Attorney of Record

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Viet H. Vu
Serial No.: 09/976,119
Filed: October 12, 2001
For: Improved Air Manager for Metal-Air Cells
Docket No.: 780396.92123

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REQUEST FOR CORRECTION OF FILING RECEIPT

Commissioner for Patents
Office of Initial Patent Examination's
Customer Service Center
Washington, D. C. 20231

Sir:

Please correct the Filing Receipt to read:

IN THE TITLE

Replace AIR MANAGER FOR METAL-AIR CELLS with

"IMPROVED AIR MANAGER FOR METAL-AIR CELLS" as indicated on the enclosed first page of the application and Utility Patent Application Transmittal filed October 12, 2001. The enclosed Filing Receipt identifies the changes in red.

Accordingly, please issue a corrected Filing Receipt for this application.

No fee is believed necessary to consider this request. However, if any fees are deemed necessary, please charge Deposit Account 17-0055.

Respectfully submitted,

VIET H. VU *et al.*

By:

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APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO.	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/976,119	10/12/2001	1745	1620	780396.92123	12	43	7

CONFIRMATION NO. 9593

UPDATED FILING RECEIPT



OC000000007459720

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Date Mailed: 02/12/2002

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

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Domestic Priority data as claimed by applicant

THIS APPLN CLAIMS BENEFIT OF 60/239,706 10/12/2000

Foreign Applications

If Required, Foreign Filing License Granted 11/14/2001

Projected Publication Date: 05/23/2002

Non-Publication Request: No

Early Publication Request: No

Title

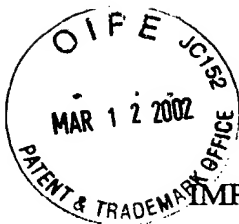
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IMPROVED AIR MANAGER FOR METAL-AIR CELLS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims priority to U.S. Patent application No. 60/239,706, filed on October 12, 2000 and entitled "Battery Cartridge for Electronic Device" the disclosure of which is hereby incorporated by reference as if set forth in its entirety herein.

STATEMENT REGARDING FEDERALLY SPONSORED
RESEARCH OR DEVELOPMENT

[0002] Not Applicable.

BACKGROUND OF THE INVENTION

[0003] The present invention relates to air-depolarized power sources having an electrode such as metal-air battery cells and, in particular, relates to an improved method and apparatus for providing an adequate supply of oxygen to air-depolarized cells.

[0004] The vast majority of portable electronic devices can be battery operated. The battery or batteries required to operate such devices are typically inserted into a cavity within the device or are attached to an external surface of the device. Of greatest interest in the marketplace today are so-called high current drain portable consumer electronic devices such as cell phones, digital cameras, flash cameras, computers, personal digital assistants, cassette players and compact disc players. In many instances, such devices accept alkaline batteries. However, alkaline batteries are not necessarily efficient energy sources for such devices since the energy available from alkaline batteries decreases as the rate of current drain increases. It thus became advantageous to provide an alternative energy source for such devices. The ability to do so was constrained by the existing cavity or surface configurations which are typically sized for a pre-determined number of cylindrical alkaline cells.

[0005] Metal-air battery cells were introduced as an improved alternative to alkaline cells for use in a portable electronic device while providing an energy source more appropriate to the high current drain conditions associated with such devices. Fig. 1 depicts the available energy of AA premium alkaline and AA zinc-air cells at various power draws. It is apparent from Fig. 1 that the energy available in the typical power ranges of 100 mW to 1000 mW is much greater in zinc-air cells than in alkaline cells. Accordingly, it is desirable to substitute zinc-air cells in place of standard alkaline cells. For example, a

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